

# CS4740 Spring 2021 Cloud Computing PA#3

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Instructions: Fill in your answers to the 5 questions and **SUBMIT A PDF to collab (along with the source code requested in Question 1 and your source code requested in Question 5)**

1. **[20 points]** After completing Part 1 (“Simulating the thermostat”), cut-and-paste a screenshot of a browser screen (full width of page) to <http://hostname/ThermsAreUs/api/v1.0/current-temp>. To receive full credit, the URL must be legible in the screenshot. If you were unable to complete this part, explain how far you were able to get and describe the problem (you were unable to debug). ALSO attach the source code for your thermostat simulator to your collab submission (if multiple files, then ZIP format).



2. [20 points] After completing Part 2 (“Getting familiar with Alexa”), cut-and-paste **two** browser screens: [1] (full width of page) when you go to the “Test” tab and engage your service. To receive full credit, both the “JSON Input” and “JSON Output” must be shown, and your name (initials) must be shown in the upper right of the image (as displayed in the Alexa Developer Console). [2] The CloudWatch logs when you go to the “Code” tab, click on the CloudWatch link (under “Code”), and then click on the most recent log (thereby showing events such as “START”, “END”, and “REPORT”). If you were unable to complete this part, explain how far you were able to get and describe the problem (you were unable to debug).

The screenshot displays the Alexa Developer Console interface. At the top, there's a navigation bar with tabs: Skills, Build, Code, Test, Distribution, Certification, and Analytics. The 'Test' tab is selected. Below the navigation bar, there's a section for 'Skill testing is enabled in:' with a dropdown set to 'Development'. To the right, there are checkboxes for 'Skill I/O', 'Device Display', and 'Device Log', all of which are checked. The main area is divided into three sections: 'Alexa Simulator', 'Manual JSON', and 'Voice & Tone'. The 'Manual JSON' section is active, showing a skill invocation for 'Hello World!'. The 'JSON Input' and 'JSON Output' are displayed. The JSON Input shows a request with session, application, and user information. The JSON Output shows a response with version, response, and session attributes. The bottom of the screen shows the Medium Hub logo and a footer with copyright information.

```
1 {
2   "version": "1.0",
3   "session": {
4     "new": false,
5     "sessionId": "amzn1.echo-api.session.55233144-dc47-462c-829a-2d8e4f646a94",
6     "application": {
7       "applicationId": "amzn1.ask.skill.e6252966-279c-44f1-8dd7-7b9b75a66111"
8     },
9     "user": {
10      "userId": "amzn1.ask.account.AHFCR6MRUCDS5P8F7FY6ZRVYXCTAJZKYM2XUANN"
11    }
12  },
13  "context": {
14    "Viewports": [
15      {
16        "type": "APL",
17        "id": "main",
18        "shape": "RECTANGLE",
19        "dpi": 160,
20        "presentationType": "STANDARD",
21        "canRotate": false,
22        "configuration": {
23          "current": {
24            "mode": "HUB",
25            "video": {
26              "codescs": [
27                "H_264_42",
28                "H_264_41"
29              ]
30            }
31          }
32        }
33      }
34    ]
35  }
36}
```

```
1 {
2   "body": {
3     "version": "1.0",
4     "response": {
5       "outputSpeech": {
6         "type": "SSML",
7         "ssml": "<speak>Hello World!</speak>"
8       },
9       "type": "_DEFAULT_RESPONSE"
10    },
11    "sessionAttributes": {},
12    "userAgent": "ask-python/1.11.0 Python/3.7.10"
13  }
14}
```



3. [20 points] After completing Part 3 (“Using voice to control your thermostat”) cut-and-paste your alexa developer console browser screen (full width of page) when you go to the “TEST” page, **open our service, and ask for the current room temperature** To get full credit, both the “JSON Input” and “JSON Output” must be shown (for our service, of course). If you were unable to complete this part, explain how far you were able to get and describe the problem (you were unable to debug).

### Hard-Coded:

The screenshot displays the Alexa Developer Console interface for testing a skill. The browser address bar shows the URL: `developer.amazon.com/alexa/console/ask/test/amzn1.skill.a15ade7b-97bc-4e4a-ac0c-30952bd59d16/development/en_US/`. The console is set to the "TEST" tab. On the left, the "Alexa Simulator" shows a conversation history: a user says "open forty seven forty thermy", the system responds with a welcome message, the user asks "what is the current temperature", and the system responds with "The current room temperature is 85 degrees!". The main area shows "Skill Invocations" with one invocation selected. It displays the "JSON Input 1" and "JSON Output 1". The JSON input is a standard Alexa request with session, application, and user information. The JSON output is a response with a speech output: "The current room temperature is 85 degrees!". At the bottom, a "Medium Hub" device is shown with a video feed.

## Using REST API:

The screenshot displays the Alexa Developer Console interface. The top navigation bar includes links for 'Your Skills', 'CS4740 Therm', 'Build', 'Code', 'Test', 'Distribution', 'Certification', and 'Analytics'. The 'Test' tab is active, showing 'Skill testing is enabled in: Development'. Below this, the 'Alexa Simulator' section is visible, with 'Manual JSON' and 'Voice & Tone' options. The 'Voice & Tone' section shows a conversation log with the following messages:

- open forty seven forty thermy
- Welcome, find out what the current temperature or current setpoint is! And if you want, change the current setpoint as well!
- what is the current temperature
- The current room temperature is 75 degrees!

The 'Skill Invocations' section shows 'Viewing: 1 / 1'. The 'JSON Input 1' section displays the following JSON:

```
1 {
2   "version": "1.0",
3   "session": {
4     "new": false,
5     "sessionId": "amzn1.echo-api.session.c9c6de75-fb0b-492f-b998-abd806fef4dc",
6     "application": {
7       "applicationId": "amzn1.ask.skill.a15ade7b-97bc-4e4a-ac0c-30952bd59d16"
8     },
9     "user": {
10      "userId": "amzn1.ask.account.ACV2T7TQV6H9NZU57KBLKQACMOJL56HNP7XZPESQF6TYYR6NDJ7DNMEKVR3M2"
11    },
12    "context": {
13      "Viewports": [
14        {
15          "type": "APL",
16          "id": "main",
17          "shape": "RECTANGLE",
18          "dpi": 160,
19          "presentationType": "STANDARD",
20          "companion": false,
21          "configuration": {
22            "current": {
23              "mode": "HUB",
24              "video": {
25                "codecs": [
26                  "H_264_42",
27                  "H_264_41"
28                ]
29              }
30            }
31          }
32        }
33      ]
34    }
35  }
36 }
```

The 'JSON Output 1' section displays the following JSON:

```
1 {
2   "body": {
3     "version": "1.0",
4     "response": {
5       "outputSpeech": {
6         "type": "SSML",
7         "ssml": "<speak>The current room temperature is 75 degrees!</speak>"
8       },
9       "type": "_DEFAULT_RESPONSE"
10    },
11    "sessionAttributes": {},
12    "userAgent": "ask-python/1.11.0 Python/3.7.10"
13  }
14 }
```

The 'Medium Hub' section shows a video player with a dark screen.

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4. [20 points] Repeat Question 3, except [1] ask what the current setpoint is, [2] ask to set the thermostat to a value that is 3 more than the value returned, and then [3] ask what the current setpoint is. You MUST have one screenshot that shows all three questions (and answers) on the left.

The screenshot displays the Alexa Developer Console interface for testing a skill. The left sidebar shows a conversation history with three questions and answers. The main area shows the skill invocation details, including the JSON input and output.

**Conversation History:**

- Question: "open forty seven forty thermy"
- Answer: "Welcome, find out what the current temperature or current setpoint is! And if you want, change the current setpoint as well!"
- Question: "what is the current setpoint"
- Answer: "The current room setpoint is 70 degrees!"
- Question: "open forty seven forty thermy"
- Answer: "Welcome, find out what the current temperature or current setpoint is! And if you want, change the current setpoint as well!"
- Question: "set the current setpoint to seven three"
- Answer: "The setpoint has been changed to 73 degrees!"
- Question: "open forty seven forty thermy"
- Answer: "Welcome, find out what the current temperature or current setpoint is! And if you want, change the current setpoint as well!"
- Question: "what is the current setpoint"
- Answer: "The current room setpoint is 73 degrees!"

**Skill Invocations | Viewing: 1 / 1**

**JSON Input 1**

```
1 {
2   "version": "1.0",
3   "session": {
4     "new": false,
5     "sessionId": "amzn1.echo-opl.session.7cce4cb7-138d-48d5-9b2e-097103133136",
6     "application": {
7       "applicationId": "amzn1.ask.skill.a15ade7b-97bc-4e4a-ac0c-30952bd59d16"
8     },
9     "user": {
10      "userId": "amzn1.ask.account.AGYZT7TQLV6H9NZU57XRLKQACM2JL56HMP87KZP65DF6TYYXNDJ37DNNEKVR3M2"
11    }
12  },
13  "context": {
14    "Viewports": [
15      {
16        "type": "APL",
17        "id": "Main",
18        "shape": "RECTANGLE",
19        "dpi": 160,
20        "presentationType": "STANDARD",
21        "canRotate": false,
22        "configuration": {
23          "mode": "HUB",
24          "video": {
25            "codecs": [
26              "H_264_42",
27              "H_264_41"
28            ]
29          }
30        }
31      }
32    ]
33  }
34 }
```

**JSON Output 1**

```
1 {
2   "body": {
3     "version": "1.0",
4     "response": {
5       "outputSpeech": {
6         "type": "SSML",
7         "ssml": "<speak>The current room setpoint is 73 degrees!</speak>"
8       },
9       "type": "_DEFAULT_RESPONSE"
10    },
11    "sessionAttributes": {},
12    "userAgent": "ask-python/1.11.0 Python/3.7.10"
13  }
14 }
```

Medium Hub

5. [20 points] Cut-and-paste the routine that handles the command to set the thermostat temperature (e.g., SetCurrentSetpointIntentHandler) . To receive full credit, this code must interact with your REST service. **ALSO attach all source code for your Alexa routine to your collab submission (e.g., lambda function.py).**

```
class SetCurrentSetpointIntentHandler(AbstractRequestHandler):
    """Handler for SetCurrentSetpoint Intent."""
    def can_handle(self, handler_input):
        # type: (HandlerInput) -> bool
        return ask_utils.is_intent_name("SetCurrentSetpoint")(handler_input)
    def handle(self, handler_input):
        url = "http://35.172.100.94:5000/ThermsAreUs/api/v1.0/current-setpoint"
        headers = {'Content-Type': "application/json", 'Accept': "application/json"}
        slots = handler_input.request_envelope.request.intent.slots
        new_setpoint = slots['setpoint']
        if(new_setpoint.value):
            data={'newsetpt': new_setpoint.value}
            r = requests.put(url, json=data, headers=headers)
            speak_output = "The setpoint has been changed to " + str(new_setpoint.value) + " degrees!"
        return (
            handler_input.response_builder
                .speak(speak_output)
                # .ask("add a reprompt if you want to keep the session open for the user to respond")
                .response
        )
```